

REMARKS/ARGUMENTS

Applicants submit this Amendment After Final (“Amendment”) in reply to the Final Office Action (“Office Action”) mailed November 25, 2003.

In this Amendment, Applicants propose to amend Figs. 1-3, 6, and 7 to improve the readability of the figure numbers of Figs. 1-3 and to amend the figure numbers of Figs. 6 and 7 to read “Fig. 6” and “Fig. 7”, respectively. Applicants also propose to amend claim 11 to better define the claimed invention and to improve clarity.

Before entry of this Amendment, claims 11-22 were pending in this application. After entry of this Amendment, claims 11-22 remain pending in this application.

The originally-filed specification, claims, abstract, and drawings fully support the amendments to Figs. 1-3, 6, and 7 and claim 11. No new matter was introduced.

In the Office Action, the Examiner rejected claims 11-22 under 35 U.S.C. § 112, ¶ 1; rejected claims 11-22 under 35 U.S.C. § 112, ¶ 2; and rejected claims 11-13 and 18-22 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,830,506 to Borzenski (“Borzenski”).

Further, the Examiner stated that claims 14-17 would be allowable once the rejections under 35 U.S.C. § 112, ¶ 2, were overcome and if the claims were rewritten to include all of the recitations of the base claim and any intervening claims.

Applicants respectfully traverse the Examiner’s rejections for at least the reasons discussed in this Amendment.

Allowable Subject Matter

Applicants gratefully acknowledge the Examiner's statement that claims 14-17 would be allowable.

Telephonic Interviews

During telephonic interviews conducted on October 22, 2003; October 27, 2003; October 28, 2003; and November 12, 2003; the Examiner and Applicants' representative discussed the Amendment filed September 8, 2003 (including Fig. 3 and claims 11, 14, 15, 21, and 22); Borzenski and EP 0,845,339 ("EP '339"); and amendments to the claim language proposed by the Examiner to place the application in condition for allowance.

Examiner and Applicants' representative agreed that the replacement sheet for Fig. 3 is not a formal drawing. Additionally, Examiner and Applicants' representative disagreed regarding the issue of support in the specification for the recitation "so that mixing of the material is completed as the pressing ram reaches the lower end-of-stroke position." Further, Applicants' representative explained to the Examiner that Applicants respectfully declined to accept the amendments to the claim language proposed by the Examiner.

During a telephonic interview conducted on January 21, 2004, the Examiner clarified to Applicants' representatives that claims 14-17 would be allowable once the rejections under both 35 U.S.C. § 112, ¶ 1, and 35 U.S.C. § 112, ¶ 2, were overcome and if the claims were rewritten to include all of the recitations of the base claim and any intervening claims.

Section 112, ¶ 2, Rejections

In the Office Action, the Examiner asserted that the recitation "so that mixing of the material is completed as the pressing ram reaches the lower end-of-stroke position" in claim 11

is indefinite. While Applicants believe that one of ordinary skill in the art would understand what is claimed, Applicants propose—in order to advance prosecution of the present application—to amend claim 11 to recite, inter alia, “wherein the mixing of the material is completed when substantially all aggregates of the material comprise an average diameter less than or equal to 50 μm .” Applicants submit that this recitation is supported by the specification at least at p. 9/ll. 10-11, and in Fig. 5.

Applicants submit that this proposed amendment obviates the Examiner’s rejection of claims 11-22 under Section 112, ¶ 2.

Section 112, ¶ 1, Rejections

In the Office Action, the Examiner asserted that the recitation “so that mixing of the material is completed as the pressing ram reaches the lower end-of-stroke position” in claim 11 is not properly supported by the specification. Applicants believe that this recitation is adequately supported by the specification, at least as shown by the discussion that follows.

Based on the telephonic interviews, Applicants understand the Examiner to accept that the originally-filed specification supports the recitation of originally-filed claim 5: “[m]ethod according to claim 4, wherein the pressing ram reaches the lower end-of-stroke position at the end of incorporation of the reinforcing filler in the polymer matrix.”

This claim, if rewritten to include all of the recitations of the base claim and any intervening claims, would essentially recite:

Method of processing polymer-based mixtures and compounds in a closed mixer (1) comprising a mixing chamber (4), a pair of rotors (2, 3), a pressing ram (8) arranged above the rotors, movable between a raised resting condition which allows the introduction of material into the mixing chamber and a lowered working condition during mixing, characterized in that lowering of

the ram to compress said material in the mixing chamber occurs by controlling the position-time profile of the descent of the ram, until the lower end-of-stroke position is reached,

wherein control of the position-time profile of the pressing ram (8) is performed when said ram enters into contact with the material introduced into the mixer (1),

wherein control of the position-time profile of the pressing ram (8) is performed by regulating the control pressure thereof, in such a way as to follow a predetermined reference position-time profile,

wherein the phase of lowering the pressing ram (8) is preceded by a phase of introduction into the mixer of at least one reinforcing filler of a polymer present in the mixing chamber, and wherein the descent of the ram occurs during incorporation of said filler in the polymer base, and

wherein the pressing ram reaches the lower end-of-stroke position at the end of incorporation of the reinforcing filler in the polymer matrix. (Emphases added).

Thus, Applicants submit that the originally-filed specification supports the recitation “wherein a position-time profile of the pressing ram is controlled during moving the pressing ram from the upper end-of-stroke position to the lower end-of-stroke position so that mixing of the at least one reinforcing filler and the polymer base is completed as the pressing ram reaches the lower end-of-stroke position.”

As a result, the question of whether the originally-filed specification supports the claim 11 recitation “wherein a position-time profile of the pressing ram is controlled during moving the pressing ram from the upper end-of-stroke position to the lower end-of-stroke position so that mixing of the material is completed as the pressing ram reaches the lower end-of-stroke position” asks if the originally-filed specification discloses—as part of the invention—the mixing of materials other than the at least one reinforcing filler and the polymer base.

Applicants submit that it does—at least several times.

For example, originally-filed claim 1 recites “[m]ethod of processing polymer-based mixtures and compounds in a closed mixer (1) comprising a mixing chamber (4), a pair of rotors (2, 3), a pressing ram (8) arranged above the rotors, movable between a raised resting condition which allows the introduction of material into the mixing chamber and a lowered working condition during mixing, characterized in that lowering of the ram to compress said material in the mixing chamber occurs by controlling the position-time profile of the descent of the ram, until the lower end-of-stroke position is reached.” (Specification, Claim 1) (Emphases added). And, as noted in the originally-filed specification, “the term ‘mixture’ in this description is intended to [indicate] the generic intermediary product obtained during any phase of the processing cycle” (Id., p. 1/ll. 14-16) (Emphasis added).

In discussing dispersion, the originally-filed specification also recites “[o]ne characteristic of compounds and mixtures which, until nowadays, closed mixers and their regulating systems did not control efficiently, is the dispersion of the various ingredients within the processed mass. . . . The present invention aims at providing a method for regulating the working process in a closed mixer, which allows a better and more constant dispersion of the ingredients in the processed mass to be obtained.” (Id., p. 2/ll. 16-18 and 26-28) (Emphases added).

Additionally, “[t]he invention arises from the [Applicants’] perception that said dispersion also depends on the profile of the position over time of the pressing ram, during the phase of incorporation of the materials in the polymer matrix. The invention applies preferably, but not exclusively, to the incorporation phase of the reinforcing filler in the polymer The invention also applies to the addition of the crosslinking system to the mixtures in order to obtain

compounds to be vulcanized, as well as to the mixing of mixtures having different compositions and, more generally, whenever it is required to combine the polymer matrix with substantially solid material introduced into the mixer during processing.” (*Id.*, p. 3/ll. 1-5 and 12-16) (Emphases added).

Further, “control of the downward stroke of the pressing ram must not be regarded as applicable only to dispersion of the reinforcing filler, but can also be performed during all the processing phases which require dispersion of other materials in the polymer mass, such as the addition of the crosslinking system to the mixtures in order to obtain compounds to be vulcanized, or the mixing of mixtures of different compositions carried out by adding one of them to the mixture already present in the mixer, and so on.” (*Id.*, p. 9/ll. 17-23) (Emphases added).

Applicants submit that at least these portions of the originally-filed specification disclose—as part of the invention—the mixing of materials other than the at least one reinforcing filler and the polymer base. Therefore, the originally-filed specification supports the claim 11 recitation “wherein a position-time profile of the pressing ram is controlled during moving the pressing ram from the upper end-of-stroke position to the lower end-of-stroke position so that mixing of the material is completed as the pressing ram reaches the lower end-of-stroke position.”

Applicants respectfully submit that at least this evidence of support obviates the Examiner’s rejection of claims 11-22 under Section 112, ¶ 1.

Section 102(b) Rejections—Independent Claim 11

Applicants submit that independent claim 11, as amended, is patentable under 35 U.S.C. § 102(b) over the cited references, including Borzenski, EP '339, U.S. Patent No. 6,312,148 to Deal et al. (“Deal”), and the other art of record.

For anticipation under 35 U.S.C. § 102, the reference must teach every aspect of the claimed invention either explicitly or implicitly. See M.P.E.P. 706.02 (8th ed., Rev. 1, 2003). Neither Borzenski, EP '339, Deal, nor the other art of record, however, teaches, explicitly or implicitly, all aspects of claim 11, including at least “wherein a position-time profile of the pressing ram is controlled during moving the pressing ram from the upper end-of-stroke position to the lower end-of-stroke position so that mixing of the material is completed as the pressing ram reaches the lower end-of-stroke position” and “wherein the mixing of the material is completed when substantially all aggregates of the material comprise an average diameter less than or equal to 50 μm .”

On page 5 of the Office Action, the Examiner alleges that c. 5/11. 43-58 and Fig. 8 of Borzenski disclose that “the mixing of the material is completed and the batch discharged from the mixer when the pressing ram 10 is at a lower end-of-stroke position (a position lower than the ARH High Limit at T = 45 seconds).” (Emphasis added). However, Applicants note that claim 11 recites “wherein a position-time profile of the pressing ram is controlled during moving the pressing ram from the upper end-of-stroke position to the lower end-of-stroke position so that mixing of the material is completed as the pressing ram reaches the lower end-of-stroke position.” (Emphasis added).

Borzenski does not appear to disclose a single position that could be classified as the lower end-of-stroke position. Instead, as shown in Fig. 8 and as tacitly admitted by the Examiner, it appears to disclose several positions that might be characterized as relative lower end-of-stroke positions. And, Applicants submit that no matter which of those positions might be chosen, mixing of the material is not completed as the pressing ram reaches that position. Instead, once the ram reaches a relative lower end-of-stroke position, Fig. 8 appears to show the ram cycling up and down from that position as the mixing process continues. Thus, Borzenski does not disclose “wherein a position-time profile of the pressing ram is controlled during moving the pressing ram from the upper end-of-stroke position to the lower end-of-stroke position so that mixing of the material is completed as the pressing ram reaches the lower end-of-stroke position.”

Moreover, Borzenski does not disclose “wherein the mixing of the material is completed when substantially all aggregates of the material comprise an average diameter less than or equal to 50 μm .”

Because neither Borzenski, EP '339, Deal, nor the other art of record teaches, either explicitly or implicitly, all aspects of claim 11, Applicants submit that independent claim 11 is patentable under 35 U.S.C. § 102(b) over the cited references, including Borzenski, EP '339, Deal, and the other art of record.

Section 102(b) Rejections—Dependent Claims 12-22

Applicants submit that dependent claims 12-22 are patentable under 35 U.S.C. § 102(b) over the cited references, including Borzenski, EP '339, Deal, and the other art of record. This is true at least due to the direct or indirect dependency of claims 12-22 from independent claim 11.

Claim Scope

In discussing the specification, claims, abstract, and drawings in this Amendment, it is to be understood that Applicants are in no way intending to limit the scope of the claims to any exemplary embodiments described in the specification or abstract and/or shown in the drawings. Rather, Applicants believe that Applicants are entitled to have the claims interpreted broadly, to the maximum extent permitted by statute, regulation, and applicable case law.

Summary

In summary, Applicants submit that none of the cited references, including Borzenski, EP '339, Deal, and the other art of record, either alone or in any proper combination, teaches or suggests Applicants' claimed invention.

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 11-22 in condition for allowance. Applicants submit that the proposed amendments to Figs. 1-3, 6, and 7 and claim 11 do not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, because all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.

It is respectfully submitted that the entering of this Amendment would allow the Applicants to reply to the final rejections and place the application in condition for allowance.

Finally, Applicants submit that the entry of this Amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

In view of the foregoing amendments and remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art

references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and reexamination of this application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

A handwritten signature in black ink, appearing to read 'L. Galvin', is written over a horizontal line.

Dated: February 25, 2004

By: _____
Lawrence F. Galvin
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